United States Patent [19]

Montanari

[11] **3,891,070**

[45] **June 24, 1975**

[54] **ASSEMBLY TYPE FILING SYSTEM COMPRISING PORTFOLIOS AND FILING CABINETS THEREFOR**

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[22] Filed: **June 19, 1973**

[21] Appl. No.: **371,508**

Related U.S. Application Data

[62] Division of Ser. No. 195,276, Nov. 3, 1971.

[52] **U.S. Cl.** ..... **190/41 R;** 150/1.6; 190/51; 312/244; 402/3; 402/76

[51] **Int. Cl.** **A45c 3/02**

[58] **Field of Search** ..... 190/41 R, 16, 51, 57; 150/1.6; 220/31 S; 206/74, DIG. 7; 312/107, 109, 244

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Primary Examiner—Herbert F. Ross

Attorney, Agent, or Firm—DeLio and Montgomery

[57] **ABSTRACT**

This invention is directed to brief case type portfolios formed in one or more pieces of plastic material and having a hinge, closure members and handle members with interlocking portions, and to interlocking storage cabinets.

6 Claims, 17 Drawing Figures

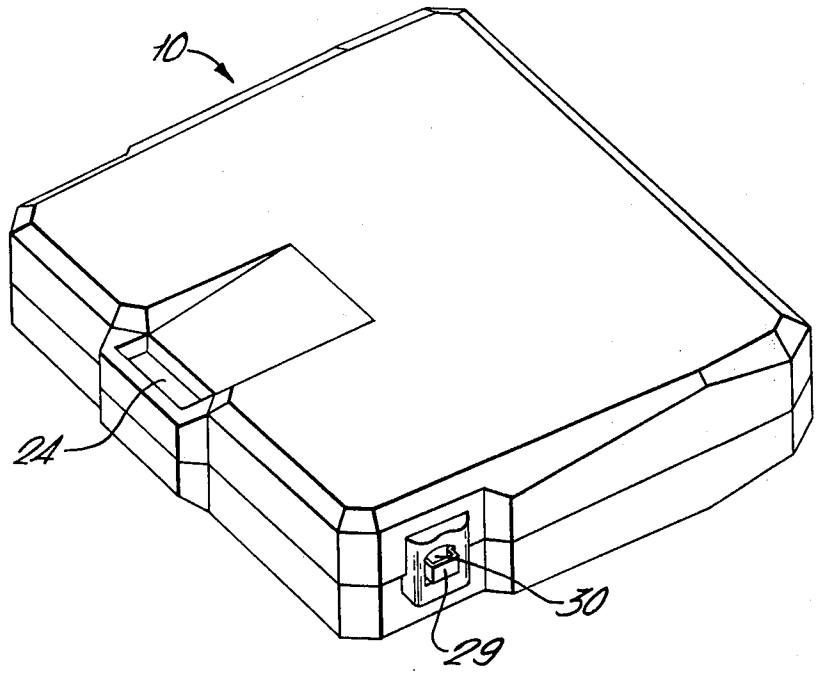


FIG. 1.

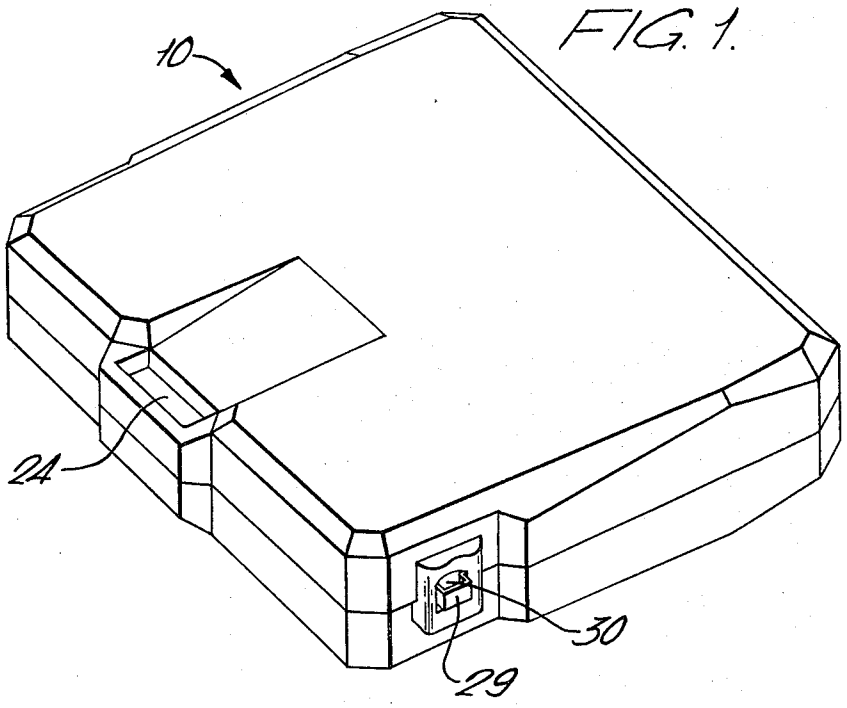
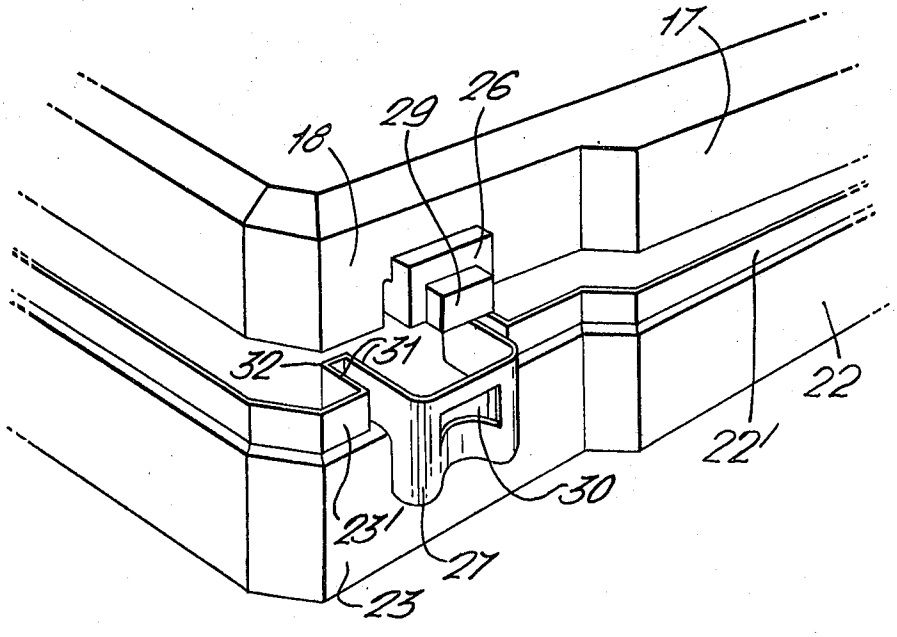


FIG. 3.



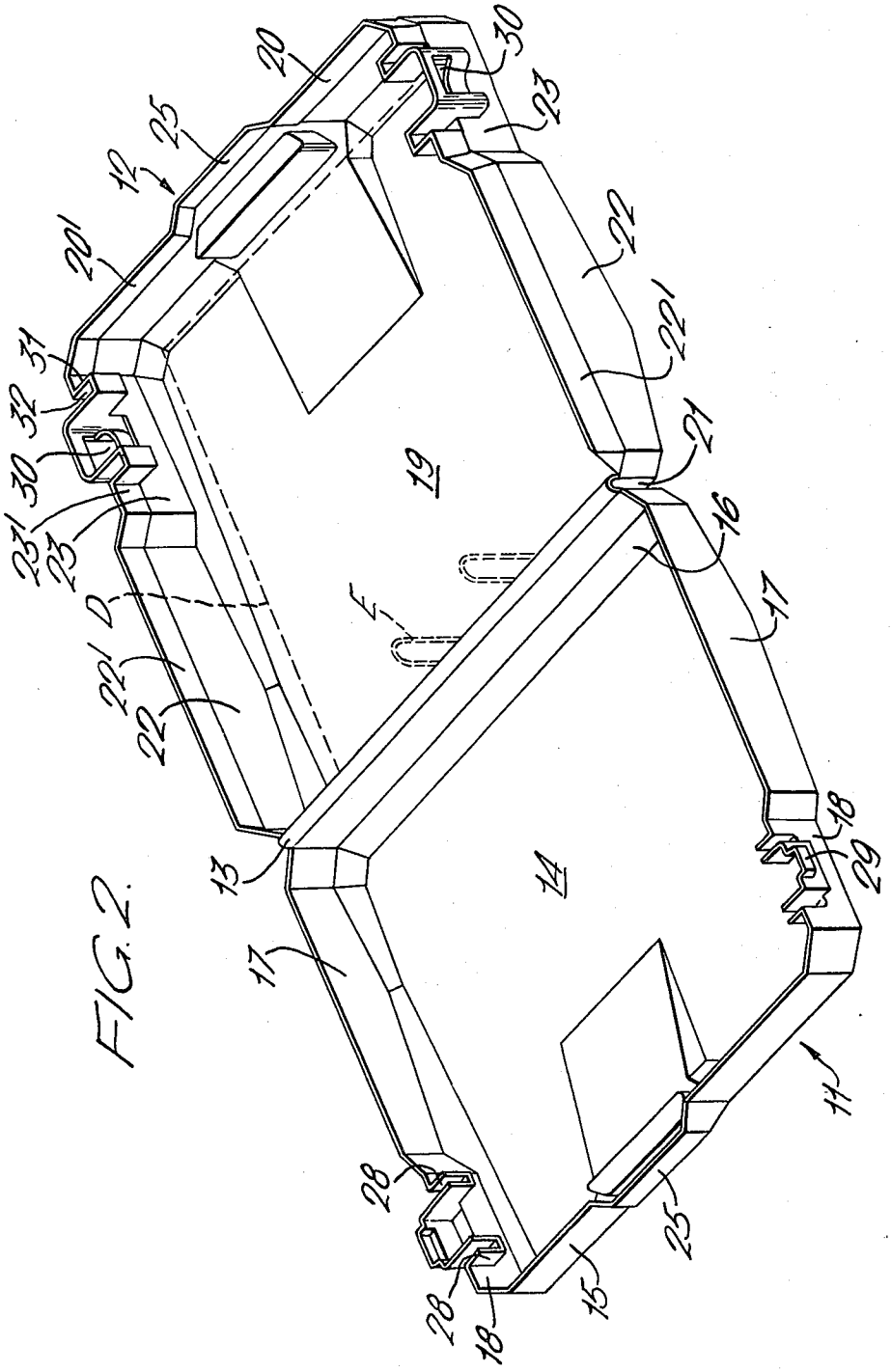

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FIG. 2.

FIG. 4.

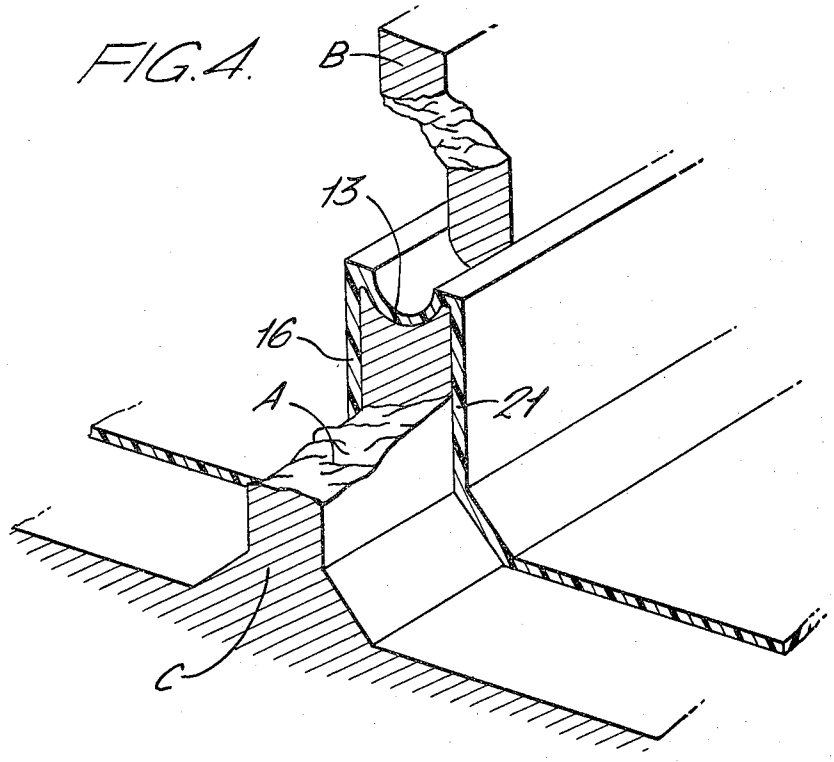


FIG. 5.

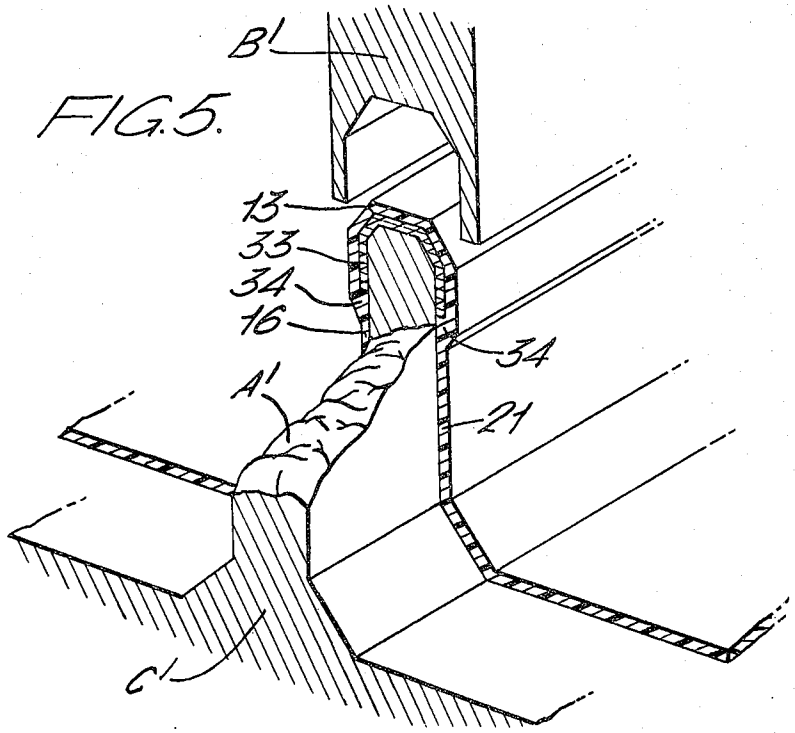


FIG. 6.

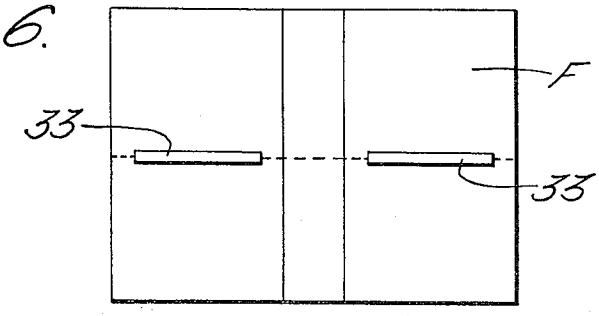


FIG. 7.

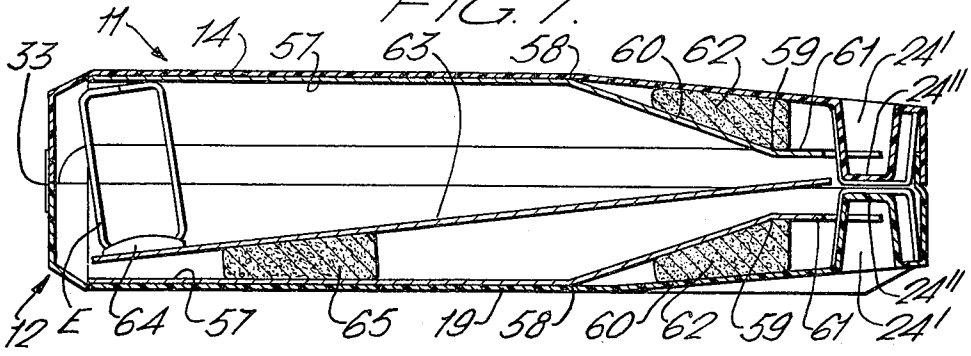


FIG. 8.

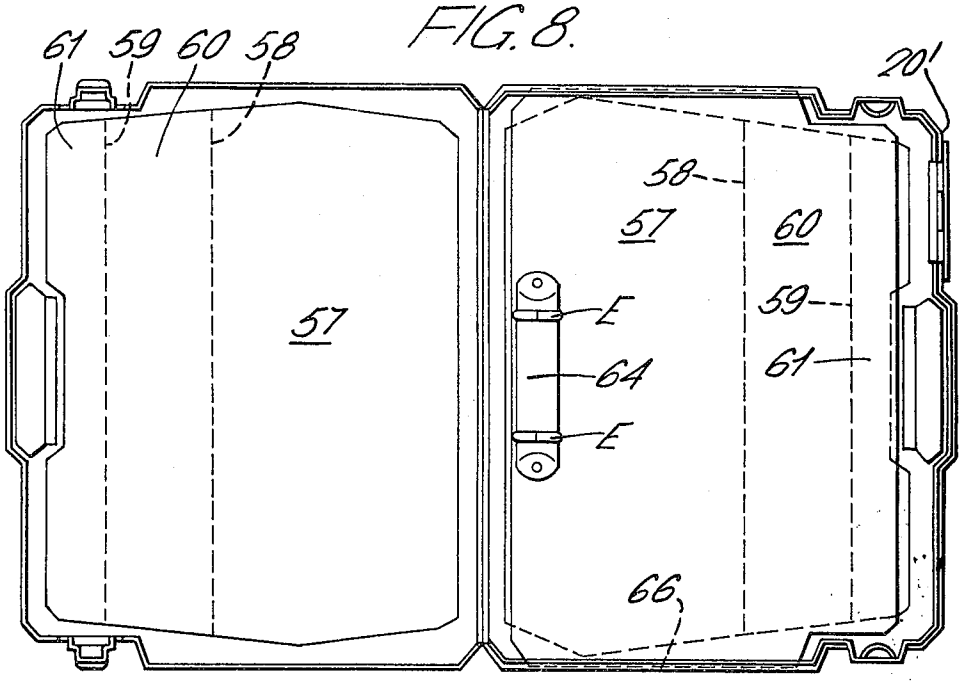


FIG. 9

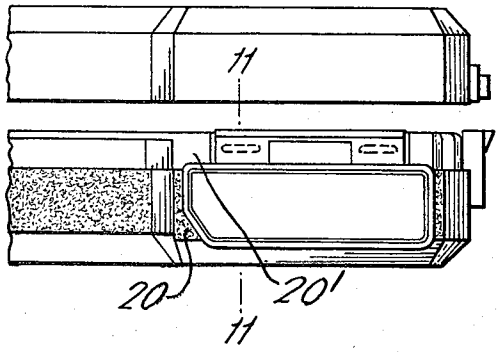


FIG. 10

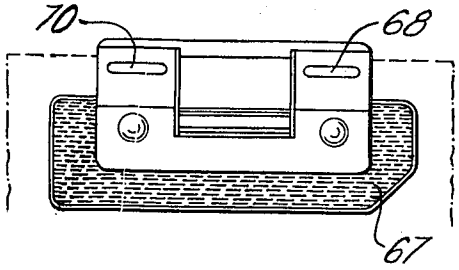


FIG. 11.

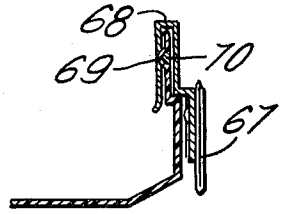
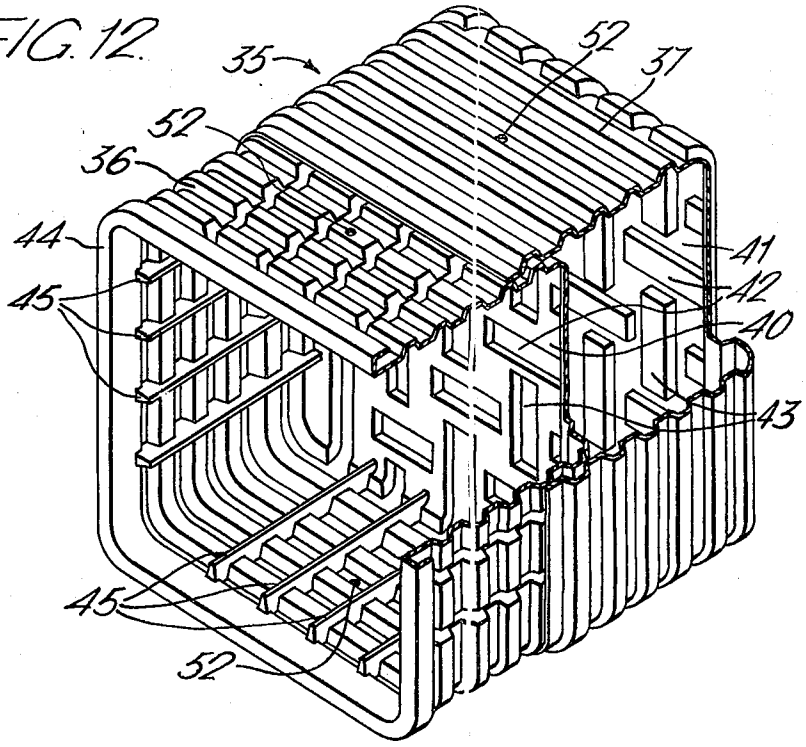


FIG. 12.



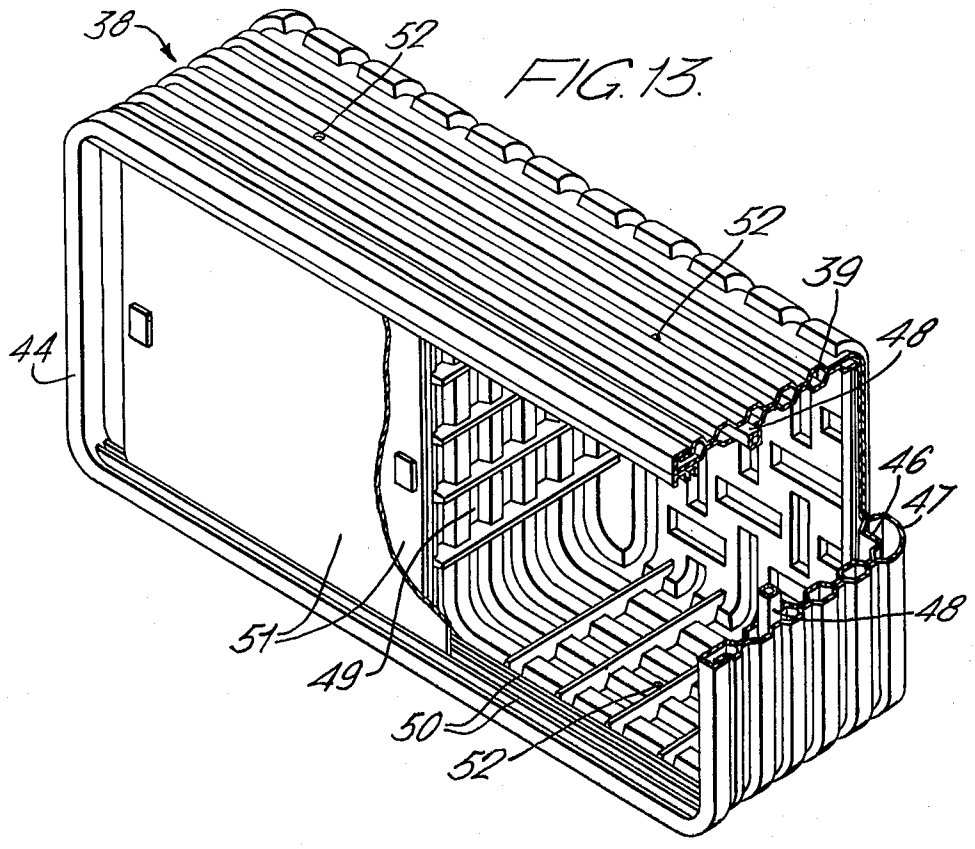


FIG. 13.

FIG. 14.

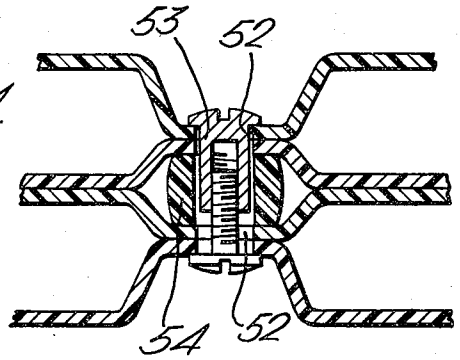
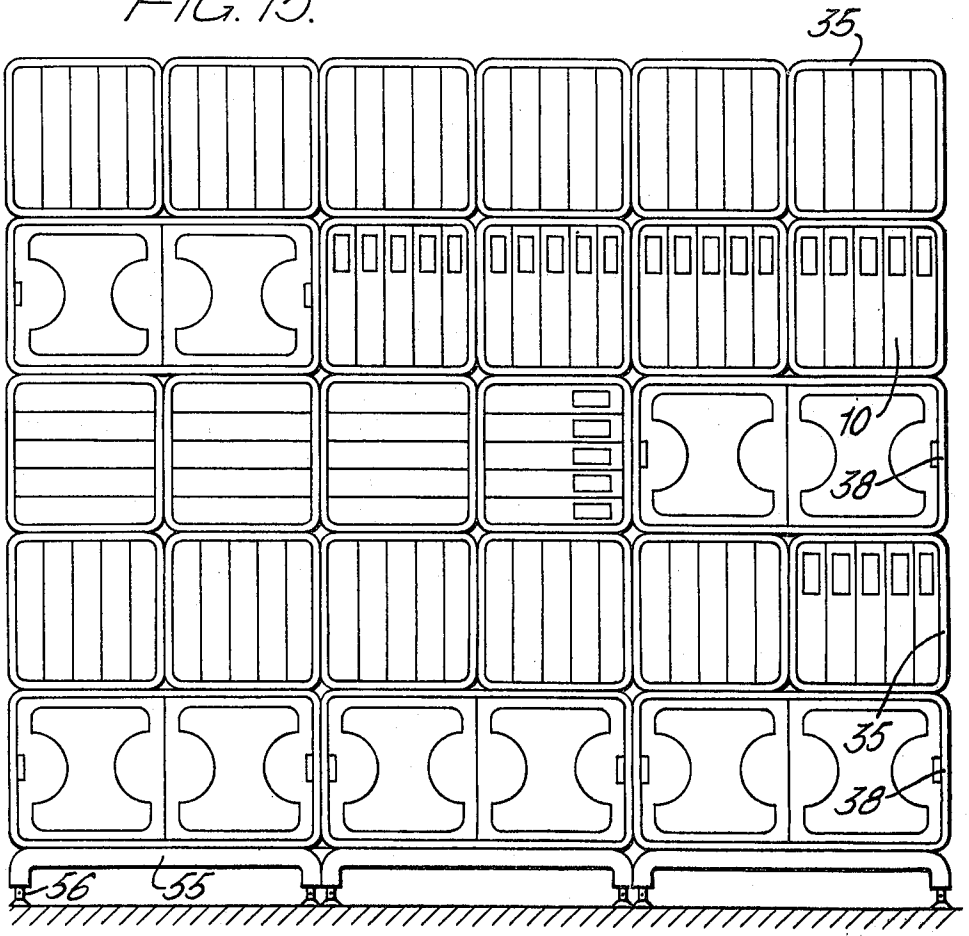


FIG. 15.



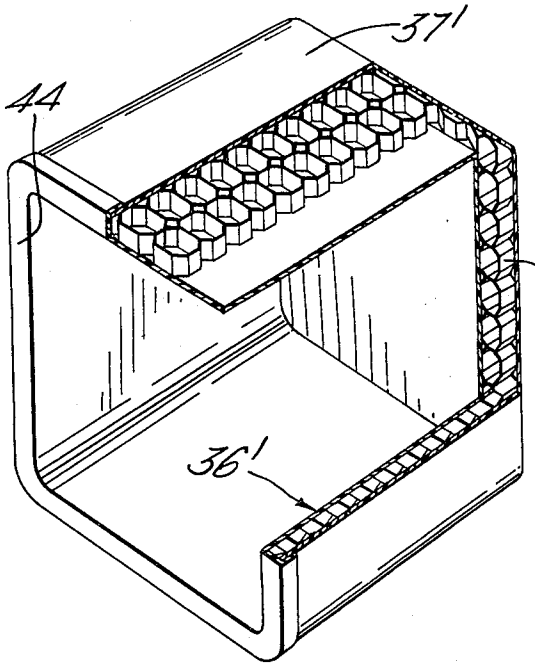


FIG. 16.

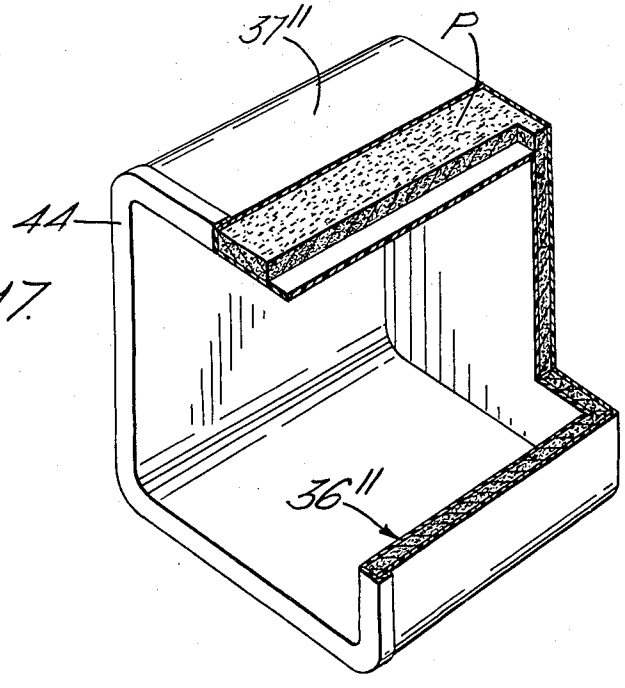


FIG. 17.

ASSEMBLY TYPE FILING SYSTEM COMPRISING PORTFOLIOS AND FILING CABINETS THEREFOR

This is a division, of application Ser. No. 195,276, filed Nov. 3, 1971.

The present invention relates to a new assembly type filing system for offices, consisting of briefcase type portfolios made of plastic material and standard cabinets for them, also of plastic material, for receiving in an orderly manner a certain number of such portfolios.

At present, in office files where binders are used, one uses the conventional cardboard binders comprising a cover and a case for it, which are placed on shelves or cabinets adapted to receive such binders, with a highly inefficient result because of waste of space, irregularity of appearance, high cost, etc. The binders themselves, moreover, are inefficient, in the first place because of the material used, that is, cardboard, possibly reinforced with cloth or metallic elements, which does not withstand moisture and hence does not offer protection from moisture to the documents contained in such binders, and then also because of the form, cover and case, which is ugly, wasteful, and offers no protection from dust.

The advantages of a filing system according to the invention are, therefore, generally speaking, twofold, namely, with respect to the briefcase portfolio according to the invention, it offers the following advantages over the present binders;

a. It requires fewer operations, as it is made of one piece, complete with hinge, closure members and handle members;
b. It offers excellent resistance and protection, with respect to moisture, for the documents contained therein;
c. It offers the possibility of sealing the portfolio for complete protection of the documents contained in it, including protection from dust;
d. It is of much greater elegance and offers the possibility of giving the folders modern colors, including bright colors, which do not change in time.

With regard to the cabinets which receive said portfolios, they are not pieces of furniture different from one another, such as shelves, cupboards, etc., adapted to contain or support the conventional cardboard binders, but they are elements, likewise of plastic material, designed and manufactured expressly for receiving the portfolios according to the invention, with the following advantages:

a. Each of these cabinets is a basic element or "module" of an assemblable system, that is, it can be used either by itself or as a modular element for the formation of units of considerable dimensions, which can be fitted together in a variety of ways;
b. They are light, strong, sturdy, and support the portfolios by means of special guides whereby the portfolios can be indiscriminately accommodated therein vertically or horizontally like boxes, in perfect order;
c. Being of plastic material, these cabinets can be variously colored according to the color of the portfolios or in contrast with them, it being possible to use the colors to indicate various types of documents filed, for example, accounting, correspondence, etc.

Accordingly, an object of this invention is to provide a new filing system for offices consisting of briefcase type portfolios, of a new kind, formed in one piece of plastic material and comprising also the hinge, the closure members and the handle members, and consisting of assembly type modular elements designed and constructed to receive such portfolios.

Another object of this invention is to provide a portfolio of the kind indicated which can be manufactured quickly and economically in one piece of plastic material of low cost.

Still another object of the invention is to supply a cabinet for such portfolios, constituting the modular element of an assemblable system, also obtained quickly and economically from an inexpensive plastic material.

The features of the invention which are believed to be novel are particularly pointed out and distinctly claimed in the concluding portion of the specficiation. However, the invention both as to its organization and operation, together with further objects and advantages thereof, may best be appreciated by reference to the following detailed description taken in conjunction with the drawings, in which:

FIG. **1** shows a portfolio according to the present invention, closed;

FIG. **2** shows the same portfolio open;

FIG. **3** is a detail illustrating one of the closure members of the portfolio of FIGS. **1** and **2**;

FIG. **4** is a detail which illustrates the process of obtaining the hinge of the portfolio according to the present invention in the molding phase of the process for its formation;

FIG. **5** is similar to FIG. **4**, but showing in detail how a reinforcement strip of said hinge is applied when using certain plastic materials of high rigidity;

FIG. **6** shows a sheet of a plastic material prepared for a process of formation by molding, as a variant, where two portfolios are formed simultaneously, on said sheet, in expedient positions, the strips which constitute the flexible hinge of each finished portfolio having been previously attached by means of a suitable adhesive;

FIG. **7** is a section of a modified form of construction of the portfolio according to the invention, along a vertical plane parallel to the side walls carrying the closure members, where the handle cavities are deeper and the bottom walls of the two halves are provided with reinforcement elements;

FIG. **8** is a view from above of the portfolio of FIG. **7**, open, showing some of its accessories;

FIG. **9** is a fragmentary front view of the portfolio of FIG. **7**, complete with identification label;

FIG. **10** is a rear view of the identification label of the portfolio of FIG. **7**;

FIG. **11** is a section of the label along line **11—11** of FIG. **9**;

FIG. **12** is a partially exploded view of a single modular element according to the invention, illustrating the structure of the two shells composing it;

FIG. **13** is a projection, with parts removed to show the structure thereof, of a double modular element according to the invention, equipped with closing door panels;

FIG. **14** shows in detail the method of joining several modular elements;

FIG. **15** is an overall view of a possible unit obtained by using single and double modular elements according to the invention together, comprising also suitable base supports;

FIG. 16 is a first variant form of a cabinet; and

FIG. 17 is a second variant form thereof.

The portfolio according to the present invention, which henceforth will be called binder for short, will now be described in detail with reference to FIGS. 1 through 11.

This binder 10 is formed in one piece from a suitable plastic material as will be better illustrated in the following, and it consists of two halves having substantially the same form, marked with the reference numbers 11 and 12, respectively, joined by a strip 13 of the same material, thinned during the snaping in the die, which, being flexible, serves as a hinge for the two halves.

The half 11 is formed by a bottom 14, a front wall 15, a rear wall 16, and two side walls 17 which, near the union with the front wall 15, have two recessed parts, 18, and the half 12 is formed by a bottom 19, a front wall 20, a rear wall 21, and two side walls 22 which, near the union with the front wall 20, have two recessed parts 23 matching the recessed parts 18 of the side walls 17.

As can easily be seen in FIG. 2, each wall of half 12, except wall 21, is extended by an edge, marked with the same number as the corresponding wall, having a ridge, slightly inclined inwardly, with whose lower part, when the binder is closed, the edges of walls 15 and 17 of half 11 of the binder are in contact, while the two rear walls 16 and 21, respectively, are joined by the flexible hinge 13, which constitutes a common integral part of the walls, but having a lesser thickness, along which the two halves roll to open and close the binder 10.

In order to facilitate the handling of the binder according to the invention, the handle members and the closure members thereof are formed in one piece during molding.

The handle members, formed by two deep cavities 24 for introducing the finger therein, are constituted in the central, slightly projecting portion 25 of the two front walls 15 and 20, respectively, of the two halves of the binder, and the closure members are formed in one piece with the recessed portions 18 and 23 of their side walls 17 and 22, respectively.

As is better illustrated in FIG. 3, each closure member is composed of a male part 26 formed in one piece with the portions 18 of the side walls 17 and a female part 27 formed in one piece with the portions 23 of the side walls 22 and with the corresponding upper edge 23'. Part 26 of the closure member is formed jutting out on wall 18, to which it is joined by two lateral reinforcement ribs 28, and it has a lock tooth 29 intended to snap into an opening 30 in the female part 27 to lock the binder 10 in the closed position.

Also part 27 is joined to the respective wall 23 by two lateral reinforcement ribs 31 which, however, form in this case a cavity 32 with closed bottom.

In the locked position, illustrated in FIG. 1, the two lock teeth 29 elastically snap into the openings 30. Obviously, to open the binder it is necessary simply to exert an inward and upward pressure on the top of the teeth 29 to make them come out of the openings 30.

In FIG. 4 is illustrated the manner in which during molding the formation of the hinge strip 13 occurs, which constitutes a common integral part of the walls 16 and 21, where references A and B indicate the partitions present in the die C employed.

But because not all plastic materials are flexible enough, even at minimal thickness, to insure a long life of the hinge it is desirable when using stiffer plastics such as polystyrene, to reinforce the strip 13 with a strip of a very flexible material, such as a cloth tape, and this variant is illustrated in FIG. 5.

In that figure, the strip 13 common to the rear walls 16 and 21 is reinforced over its entire length by a cloth tape 33 firmly attached thereto and "embedded" in the plastic material during the molding of the binder.

To achieve this, according to the invention, there is placed on the partition A' of die C, before the molding operation, a cloth tape 33 impregnated with an adhesive suitable for this plastic material, and one then proceeds with the molding as usual. The local sliding of the material, pressed toward the sides of the two partitions A' and B' causes a thickening 34 in the walls 16 and 21, and in this thickening the strip 33 is embedded.

Note the different form of the partitions A' and B' as compared with that of the partitions A and B, in view of the different function they fulfill.

In FIG. 6 is illustrated a variant process where a sheet F of a suitable plastic material, for example, polystyrene, is used, from which are obtained two binders by formation in coupled dies. While previously the cloth strip 33 impregnated with a suitable adhesive was placed on the partition A' of die C, according to the present variant two sections of cloth tape 33 are previously glued in suitable positions on sheet F so that, following the molding, they are superposed on the strip 13 which unites the two halves of the portfolio formed, constituting the flexible part of the hinge.

This procedure obviously reduces the operating times for the manufacture of the portfolios according to the invention.

The portfolio according to the invention will then be completed, to conserve the documents, by a support D, as for example, a sheet of a suitable rigid material, to which are joined two rings E of conventional type on which the documents, which may be perforated along one edge in known manner, are inserted.

In FIG. 2 the sheet D and the bridges E are shown in broken lines, but they will be discussed in greater detail later on with reference to FIG. 7.

Referring now to FIG. 7, it will be observed that in it is illustrated a slight modification of the binder according to the invention, where on the bottom 14 of half 11 and on the bottom 19 of half 12 there are glued parts 57 of a sheet of cardboard or other suitable stiffening material folded at 58 and at 59 so as to have portions 60 detached from said bottom walls and standing out from them, and portions 61 forming an angle with the latter. The parts 57 are glued on the bottom walls 14 and 19 during the molding process.

The portions 60 and 61 have joined to them in suitable manner pads 62 of a resilient expanded foam material, which tend to keep the portions 61 of the two cardboard sheets in contact with one another.

One of the portfolio halves may also contain a rigid cardboard sheet 63, to one of the edges of which is fastened the tab 64 of known type carrying the two openable rings, in which the previously perforated documents to be preserved are inserted. To the lower face of the cardboard sheet 63 are expediently glued two pads 65, of the same material as the pads 62, intended for resiliently mounting the sheet 63 inside the binder, which sheet, as shown in FIG. 8, engages by its edges

65 under the slightly recessed parts of the portfolio half containing it.

Evidently this type of arrangement is not fixed, and the cardboard sheet 63 can easily be taken out of said half.

It will be noted also that the handle cavities, indicated by 24', are deeper and their bottom walls 24'' touch in the closed position of the portfolio.

In FIGS. 10 and 11 is illustrated the removable label which can be applied to the portfolios according to the invention, and which consists of an ordinary label-holder 67 to which is expediently fastened a jointing element 68 for attachment to the portfolio straddling the edge 20' (FIG. 2) of the front wall 20, on which have been expediently provided two rectangular notches 69, into which fit two matching projections 70 formed on the attachment part 68.

For the orderly arrangment of the binders illustrated and described above with reference to FIGS. 1 to 11, the present invention provides the use of cabinets specially conceived and designed for them.

These cabinets have also been designed to constitute a base element or "module" of an assemblable system of very versatile use. For this purpose they have two standard dimensions, one intended to contain five binders 10, and the other, of double dimensions, intended to contain 10 such binders.

In FIG. 12 is illustrated, in semi-exploded view, a single modular element intended to receive five binders 10 and indicated generally by the reference number 35, in a first embodiment thereof.

As is clearly visible, it is composed of an inner shell 36 and an outer shell 37. The two shells are molded in one piece of a suitable rigid plastic, as for example polystyrene, and the inner shell 36 is completely inserted in the outer shell 37 after the corresponding contact surfaces have been covered with a suitable adhesive.

As is clearly shown in the figure, the side walls of the two shells present ribs so arranged that when the two shells are inserted one in the other, the ribs join forming a nested structure.

This structure is shown more clearly in FIG. 13, where it is indicated with the reference number 39, the figure representing a double modular element 38 which differs from the single modular element 35, illustrated in FIG. 12, only in the dimensions, while the shape and structure are substantially identical with those of the latter.

Referring again to FIG. 12, the bottom walls 40 and 41 of the two shells 36 and 37, respectively, are reinforced by projecting and recessed parts in vertical and horizontal direction, indicated generally, for both walls, with the reference numbers 42 and 43, which, when the walls 40 and 41 are in contact, form a nested "latticed" structure which insures extreme resistance to the vertical compressive stresses which may have to be sustained by the modular elements.

The inner shell 36 is further completed by a front cornice 44, intended to cover the free edge of the outer shell 37 and to trim the opening of the cabinet 35, and by sixteen guides 45 (four for each side wall) arranged perpendicularly to said cornice and spaced by a distance equal to the thickness of each binder 10. In this way, obviously, five binders can be received and supported in each cabinet 35, which binders can be arranged either horizontally or vertically.

The cabinet 38 or double modular element illustrated in FIG. 13 is, as has been said before, very similar to the single modular element 35, and the structure is practically identical with that of the latter, especially with regard to the side and bottom walls, except for some details.

In the first place, because of the greater width, there is inserted between the inner shell 46 and the outer shell 47, in a suitable opening formed in matching positions on the two shells, a substantially rectangular element 48 of suitable sectional metal, of square cross-section. In the second place, the inner shell is divided into two separate substantially cubic cavities, formed by means of an intermediate dividing wall 49, each of the two cavities being substantially identical with the inner cavity of a single modular element 35, and being equipped, on each wall, with four guides 45 for receiving five binders 10.

Moreover, near the cornice 44, on each inner face of the two longer walls of the cabinet 38, there may be applied rail guides 50 which, if desired, can receive two sliding door panels 51. It should be pointed out that the presence of these panels is optional, as the modular element 38 can be used without the panels 51.

Lastly, as a general characteristic, there are provided on each wall, except the bottom wall, either of the modular elements 35 or of the modular elements 38, one or more through-holes 52 intended to receive fastening elements which serve to join together firmly several single and/or double modules.

Each fastening element 53 may, for example, consist of bolts such as those illustrated in FIG. 14 used together with an annular spacer 54 of a suitable, expediently elastic material.

The modular elements 35 and 38 according to the invention can, however, be designed also with other structures (not illustrated in the drawings) which may be adopted as a variant of the embodiment illustrated and described before.

In a first variant, each cabinet or modular element, whether single or double, instead of being formed by two shells with ribs, will be formed by an outer shell 37' of smooth walls, an intermediate shell G of nested structure, for example honeycombed, and an inner shell 36' also with smooth walls, the three shells being inserted one in the other and firmly joined together in desirable manner.

In a second variant, said single or double modular elements will be formed by an outer shell 37'' of smooth walls and an inner shell 36'' also of smooth walls, adapted to be inserted in the outer shell so that all inner faces of the latter and the outer faces of the inner shell are not in contact, but there exists between them a continuous free interstice which will be filled with a suitable expanded material P, such as polyurethane foam.

The union of several single or double modular elements constitutes a very versatile assemblable system with regard to the characteristics of use, dimensions, capacity and appearance, of which a non-limitative example is given in FIG. 15.

As will be seen, such a unit, supported by rectangular base frames 55 equipeed with feet 56 adjustable by screw, known in themselves, is composed of several double modular elements 38 variously combined with several single modular elements 35 in which are received in orderly fashion, in horizontal or vertical position, binders 10 according to the invention.

It will be noted that as basis of the unit, also in reference to the dimensions of the frames **55**, it is preferred to use modular elements **38** of the double type.

It is understood that the binders and the modular elements according to the invention can be formed by means of any of the known molding techniques for plastic materials.

It may thus be seen that the objects of the invention set fourth as well as those made apparent from the preceding description are efficiently attained. Inasmuch as other embodiments of the invention may occur to others skilled in the art, the appended claims are intended to cover all modifications of the disclosed embodiments of the invention as well as other embodiments thereof which do not depart from the spirit and scope of the invention.

What is claimed is:

1. A one-piece plastic, briefcase type portfolio comprising:

a first half having a bottom, a front wall, a rear wall and two side walls which, near the union with the front wall, have two recessed parts; and

a second half having a bottom, a front wall, a rear wall and two side walls which, near the union with the front wall, have two recessed parts matching the recessed parts of the side walls of the first half, the edge of said side and front walls being extended and slightly inclined inwardly, on which are superposable the edges of the matching walls of the first half;

said two halves having mating hand and closure portions defining handle and closure members, and being joined by a strip which is unitary with the rear walls thereof but of less thickness than the walls of said halves wherein, at the bottom of each half thereof, there is affixed a part of a sheet of stiffening material the front part of which is detached from the bottom of said half, said detached part having a transverse fold such as to divide said detached part into a first portion forming a predetermined angle with the glued part and a second end portion forming with said first portion a more obtuse angle, said angles being such that when the portfolio is closed, the two end portions are close together so as to press resiliently between them the free edges of sheets which may be contained in the portfolio; said detached part of said sheets having affixed thereto a pad of expanded, spongy material, said pad acting between the detached part and the front part of the bottom of the respective portfolio half so as to increase the resilient holding of the free edges of the sheets between the detached parts of the sheets.

2. A portfolio according to claim **1**, wherein the strip joining the two halves is reinforced by a strip of flexible material which is firmly joined to and embedded in the rear face of said walls.

3. A portfolio according to claim **1**, wherein said handle portions are defined by cavities for introducing the fingers therein, each cavity being positioned behind a projecting portion of each front wall of said two halves constituting the portfolio.

4. A portfolio according to claim **1**, wherein a closure member is positioned on each said side wall thereof, each said closure member comprising a male portion formed in one piece jutting out on said recessed part of the side wall of the first half and having reinforcement ribs and a lock tooth turned outwardly, and a female portion formed to jut out on said recessed part of the side wall and on the corresponding extended edge of said second half, said female portion having reinforcement ribs and an opening of a form matching that of said lock tooth, whereby said lock tooth snaps resiliently into said opening to lock the portfolio in a closed position.

5. A portfolio according to claim **1** including a rigid cardboard sheet loosely contained in one of said halves, said cardboard sheet having centrally fixed on one of the edges thereof, a tab carrying spaced bridges on which are insertable perforated sheets to be kept in the binder, there being affixed to the face of said cardboard sheet opposite said bridges two pads of an expanded, spongy material for resilientyl mounting the said rigid cardboard sheet within said half, the lateral edges of the said rigid cardboard sheet being engaged under recesses formed in the side walls of said half.

6. A portfolio according to claim **1** wherein on one side of the upper edge of the front wall there are provided two horizontally spaced rectangular notches, said portfolio further including a removable label comprising a label-holder to which is fastened the lower appendix of a joining element of generally U-shaped cross-section, said joining element being adapted for insertion on said edge of the front wall, and said joining element having two horizontally spaced rectangular projections formed inside said U-shaped part so as to be received in said matching notches for removably holding said label in place.

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